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SOYBEAN PASTURES FOR HOGS

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SOYBEAN PASTURES FOR HOGS

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By Dan T. Gray, *Chief Animal Industry Division*

Until the farmer sees his way clear to make a permanent pasture, or s one already made, he should keep out of the livestock business. It in fact, almost impossible to realize a profit upon any kind of stock thout good pastures. Therefore, the first thing to be done when one ntemplates engaging in stock raising is to establish a pasture.

The South, which is the very section where they can be made easily, sadly deficient in pastures. No attention has been given to them; has all been given to cotton. But the southern farmer, if he will vote some time and effort to the subject, can have as good a pasture as as ever seen in Kentucky or Missouri and have that pasture available r grazing more months in the year than is possible in those States. or a permanent pasture there is no combination, either in the North in the South, that is superior to bur clover and Bermuda grass. This mbination, of course, is not suited to all parts of the State. For a dis- ssion of the kinds of pastures suited to the various parts of the State e North Carolina Extension Circular No. 17. Bermuda can be grazed roughout the summer months and bur clover from January until ermuda comes on again. The combination will afford grazing at least n months of the year. Both plants are permanent after they are once tablished. To supplement the permanent pasture, temporary pastures ould be grown, as cowpeas, peanuts, etc., but no farmer who has stock n afford to be without some kind of a permanent pasture combination be ready for use when the temporary pastures cannot be employed.

Soybeans have proven to be exceedingly valuable as a feed for hogs. o some farmers of the State the soybean is a common crop; to others is new and the method of fertilizing, planting and cultivating are not nderstood. In some parts of North Carolina the soybean is grown tensively and sold as seed. In other parts of the State is is thought of together as either a hay or a pasture crop. In fact, it is a very aluable crop both for hay and for use as a pasture for hogs. The Ten- essee Station (Bulletin 82) has compared the cowpea and the soybean s to their habits of growth, yields, etc. According to this bulletin the owpea has the following advantage over the soybean:

(1) The soybean may fail to come through a crust which would offer ut little resistance to cowpeas.

(2) The germination of the cowpea seed is surer than that of the oybean seed, which is liable to be spoiled by heating. The cowpea is, nerefore, better than the soybean for broadcasting, especially on land nat is heavy and liable to "bake."

(3) The cowpea is much better suited than the soybean for planting ith either corn or sorghum.

(4) Cowpea hay is more easily cured by the methods in common use, ithout the increased loss of either leaves or fruit, than soybean hay.

The soybean, on the other hand, appears more valuable than the cow pea, (1) as a grain producer; (2) as an intensive farm crop; (3) as a early hay or grazing crop for which purpose the early and mediu varieties will produce either hay or seed several weeks ahead of an variety of cowpeas which had been tested at the Station; (4) the see decay more slowly than those of the cowpea when left on the ground, s are better adapted to being pastured off by hogs.

Rabbits feast upon the soybean while they will not bother the cow pea at all. Therefore, the farmer who plants soybeans should plan enough for both himself and the rabbits.

When the writer was at the Alabama Experiment Station many test were made to determine the exact value of soybean pastures for hog when corn, in various amounts, was used as a supplement. The crop of beans were planted in May upon a sandy soil of average fertility In 1910 the crop was better than the average crop of the State; bot the stand and the yield were excellent. But in 1908 and 1909 the crop were just about what the farmer could expect to grow upon soils o average fertility. The beans were planted in the drill and cultivated Two hundred pounds of commercial fertilizer, consisting of potash an 16 per cent acid phosphate, were used on each acre. Approximatel one-half bushel of seed was used to each acre. The Southern, or Mam moth Yellow, variety was used in all tests. Some varieties, as th Hollybrook, mature earlier than the Mammoth Yellow, but will no make as large yields as the Southern variety.

In the tests above referred to the soybean pasture afforded grazin 42 days in the fall of 1908, 81 days in 1909, and 80 days in 1910. Th pastures were gathered by the hogs themselves. When this method o harvesting is followed the crop is never lost on account of rains o unfavorable weather. The hogs were turned into the pastures three o four weeks before the beans themselves were ready to be eaten; in fac they were turned into the fields about one week after full bloom, or jus about the time the first pods began to appear. Some farmers repor unsatisfactory results with cowpeas and soybeans when used for grazin purposes, and it is probably true that these unsatisfactory results wer due to the fact that the hogs were turned into the fields at too late a stag of maturity.

The lower leaves should not be wasted. It should be remembere that the leaves of the soybean and cowpea plants are approximatel equal in feeding value to wheat bran, pound for pound. The only wa to make use of the leaves that ripen and fall early is to turn the hog into the field when these leaves first begin to ripen. Care must b taken, though, not to overstock the pasture; if too many hogs are turne into the field at this immature stage the whole crop will be torn dow within a few days. In these tests six pigs, weighing about 60 pound each, were turned onto each acre.

Some corn was used to supplement the pastures. As one of th objects was to learn the most profitable amount of corn to use alon with a green pasture, various amounts of corn were used. In Lot 1 one-fourth of a full ration of corn was used; that is, an amount of cor

ıal to 1 per cent of the total live weight of the lot was fed each day; one pound of corn to each 100 pounds of live weight was given ly. In Lot 2, two pounds of corn to each 100 pounds of live weight re fed each day. (This is a one-half ration of corn.) In Lot 3, ee pounds of corn to each 100 pounds of live weight were given ly. (This is a three-fourths ration of corn.)

'BEAN PASTURES VS. CORN ALONE, AND THE MOST PROFITABLE AMOUNT OF CORN TO USE WITH THE PASTURE—AVERAGE OF THREE YEARS' WORK

(Alabama Bulletin, No. 154.)

Ration	Average Daily Gains	Feed to Make 100 Pounds of Pork	Cost of Grain to Make 100 Pounds of Pork*	Grain Plus Pasture-Cost to Make 100 Pounds of Pork*	Value One Acre in Terms of Corn
	Pounds	*Pounds*			*Bus.*
Corn, ¼ ration, Soybean pasture.	1.102	68—0.218 acre	$ 2.04	$ 6.32	44
Corn, ½ ration, Soybean pasture.	1.006	138—0.204 acre	4.14	9.22	41
Corn, ¾ ration, Soybean pasture.	1.329	175—0.123 acre	5.26	7.72	63
Corn alone.....	.375	609	18.28	18.28	.....

Corn valued at $1.68 a bushel; soybean pasture valued at $20 an acre.

That soybean pasture is an exceedingly cheap feed for hogs is the ıst striking point in the above table. That corn alone is an exceedgly poor feed for hogs is another impressive fact brought out. When e tests began the pigs averaged about 45 pounds in weight. Of ırse, if they had been more mature the corn would have shown up in oetter light than it did, as corn is more suited to old than to young imals. When corn alone was used the average daily gain for the ree years was only .375 of a pound, while the hogs that grazed the ybean pasture averaged more than a pound per day; in one lot, Lot 3, e average daily gain per pig was 1.329 pounds. The hogs which eived the small amount of corn made greater gains (in one case 5 ıes as great) than did the hogs which were fed nothing but corn. ıe soybean pasture was responsible for the large gains; it afforded e hogs a green feed and at the same time balanced the corn ration so ıt the corn which was eaten along with the pasture did the hogs more od than did the corn which was eaten alone. Corn is low in both pron and ash; soybean pasture is high in both ash and protein. When rn is valued at $1.68 a bushel and the pasture at $20.00 an acre, the st of 100 pound of gain varied from $6.32 to $18.28. When corn was ed alone it cost $18.28 to make 100 pounds of increase in live weight; ıen a one-fourth ration of corn was used along with the pasture the me gains cost $6.32. When a one-half ration of corn was fed with the ybean pasture it cost $9.22 to make 100 pounds of pork, and $7.72 to ıke the same amount of pork when a three-fourths ration of corn was ed. Or, in every case where the soybean pasture was used pork was

made for less than one-half (and in one case almost one-third) of wh it cost when corn was used alone.

The last column in the above table shows the value of each acre soybean pasture in terms of corn. The figures represent an average three years' experimentation. Each acre of soybeans was equal, in fee ing value, to 44 bushels, 41 bushels, and 63 bushels of corn, when a or fourth ration, a one-half ration, and a three-fourths ration of corn, r spectively, were used along with the pasture. If corn had been grow no more than 30 bushels would have been raised, even with a liber application of commercial fertilizers. In 1910-'11, an extra good cr of soybeans was grown (for the character of soil) and one acre of t pasture took the place of 53.8 bushels of corn in one lot, and 72 bush in a second lot.

PROPER AMOUNT OF CORN TO FEED WITH A SOYBEAN PASTUR

It is of great interest to the farmer to know just how much grain feed along with the pasture crops. Feeders are not yet agreed as to t proper amount of corn to use with a pasture. Some claim that grain at all should be used with a good pasture; others claim th better results are secured when a full ration of corn is used along wi the pastures. Of course, all agree that the amount of grain fed depends upon the kind of pasture used and whether the animals are ju "being carried along," or are being rushed to a finish. The above wo was outlined with a view to determining the proper amount of corn use along with a pasture, as soybeans. Accurate account was kept the amount of pasture consumed by each lot of hogs, and the cost putting in and cultivating the crops. On the average, it cost t Station $16 an acre to seed, fertilize and cultivate a soybean crop.

It seems clear that several points must be taken into considerati before one can determine what is the right amount of corn to fe along with pastures when hogs are being finished for the market. definite answer cannot be given to the question, How much corn sh I use with my pasture? First, the condition of the hogs at the end the feeding period must be taken into account. The hog that has ceived a light grain feed along with pasture will not be in as go killing condition at the end as will the hog that has received a hea grain feed, notwithstanding the fact that the former may have gained rapidly as the latter. When there are large amounts of corn upon t farm to be disposed of, there is no better way to market it than throu hogs on pasture; so the problem may, in the second place, resolve its into a question of finding a good and high-priced market for corn. Wh this is the case, it would no doubt be wise to feed corn liberally, that the extra supply may all be used before the next crop is ma No farmer can afford, under present conditions, to sell his corn direc upon the market, as corn—even for $2 a bushel. In the above te from $3.92 to $8.50 were secured for each bushel of corn when h sold for fourteen cents a pound live weight, the larger price being secur when the light ration of corn was used. Third, the amount of availa pasture will have something to do with the amount of corn to feed.

area of pasture is small for the number of hogs on hand, it will to be liberal with the corn in order that the pasture may be extended r as long a period of time as possible. The grain will save the pas-e, as the above figures show, and all of the hogs will have a greater ortunity to get the benefit of some pasture. That is, it is no doubt ter to save the pasture (when pasture is scarce) with an increased ount of grain, than to graze the pasture down rapidly on account of holding grain. Fourth, the amount of grain used depends also on the length of time the farmer has to get the animals ready for market. If the animals must be killed or sold within a few weeks, may pay to use a heavy grain ration with the pasture, as the hogs l gain much more rapidly upon a full grain, than upon a light in ration. When prices are ruling low, and there is good prospect an advance, it may be wise to simply carry the hogs along on the ture, plus a light grain ration (or no grain at all) until the prices vance. If hogs are selling at a good figure, and there is danger of lepreciation in value on account of prices falling, it is the part of dom to finish rapidly through the liberal use of grain.

When the animals are to be sold within thirty days after the supply soybean pasture is exhausted no question should arise in the mind of feeder as to the final profitableness of feeding each one hundred-nd hog about two ears of corn daily to supplement the pasture. When s practice is followed, the corn, in the first place, is sold by means of hogs above the market price, and, in addition, this small amount of ain prevents an undue softening of the bodies of the animals. In fact, en corn is fed in conjunction with the pasture no difficulty is ex-rienced in bringing the bodies of the hogs back to a corn standard thin thirty days when a "topping off" ration made up of two-thirds rn plus one-third cottonseed meal is employed. Experimental results ured at this Station, and soon to be published, bear out this statement.

CARRYING CAPACITY OF EACH ACRE OF SOYBEANS

The length of time an acre of soybeans affords feed for a certain mber of hogs depends, of course, upon the size of the hogs, the amount supplementary corn used, and the crop itself. In the Alabama tests e pigs, at the beginning, weighed 45 pounds each; at the close they ighed about 125 pounds each. In these tests it was learned that an erage acre of soybean pasture afforded grazing for ten pigs 43 days en a fourth ration of corn (about one ear a day) was fed, 48 days en a half ration of corn (about two ears a day) was used, and 62 ys when a three-fourths ration of corn (about three ears a day) was ployed. Better results may be expected upon soils which are better an the average.

POUNDS OF PORK MADE ON EACH ACRE

Many farmers claim that it is not a profitable method to dispose of a sture crop, as soybeans, by grazing with hogs; it is often claimed that e crop can be disposed of in other ways, as making it into hay, to

better advantage. Some hold to the idea that great losses by tramplin and riding down the plants are sustained when hogs are turned into hay crop. When it is known, however, that each acre in Lots 1, 2, and produced 459, 490, and 813 pounds of increase in live weight, respec ively, one realizes that this crop is exceptionably valuable when turne into meat. The pastures were not responsible for the total gain, as som corn was fed, but when hogs are valued at 14 cents a pound each acr returned a value, in terms of pork, of $56.46, $51.68, and $78.26 i Lots 1, 2, and 3, respectively, after the value of the corn eaten wa deducted in each case.

For additional information as to other phases of swine productio consult with your county agent or write the Animal Industry Division a Raleigh or West Raleigh.